THE BOSTON
MEDICAL AND SURGICAL JOURNAL.

VOL. XCIX. — THURSDAY, NOVEMBER 7, 1878. — NO. 19.

A CASE OF HYDROPHOBIA: WITH REMARKS ON THE PATHOLOGICAL PHYSIOLOGY OF THE DISEASE.[1]

BY T. B. CURTIS, M. D.

Case. (Reported by Mr. J. B. Wheeler, house-pupil at the Massachusetts General Hospital.) A. B., of Boston, age sixty-eight, lamplighter, had of late years enjoyed very good health, with the exception of an epithelioma of the lower lip, which was "drawn" by a female cancer-doctor three weeks before entrance. He was a large, powerful man, in remarkably good muscular condition for his time of life. Mentally, he seemed a fine specimen of an uneducated American. He was ignorant but intelligent, of a manly character, and much respected in his neighborhood. On July 19th — about seven weeks before his admission to the hospital — he was bitten in the right thumb by a strange cat which he attempted to caress. The wound was not cauterized. A "bone-felon" ensued, which was treated with various poultices, and necrosis of the distal phalanx of the thumb occurred.

On the morning of September 9th the patient appeared at the Massachusetts General Hospital, and was given a bed in the wards of Dr. C. B. Porter, whose place was then being temporarily filled by Dr. T. B. Curtis. He complained of difficulty of swallowing, first noticed at supper the evening before, no such trouble having been experienced at dinner, and of entire inability to eat his breakfast that morning. This outbreak of characteristic symptoms had not been preceded by any change of character or emotional disturbance. During the night, however, he had been very restless, and at breakfast he found that the attempt to put liquid in his mouth brought on a paroxysm characterized by choking, gasping, and by rapid, irregular movements of the arms and legs. Dr. C. C. Street, who was called in, refrained from acquainting the patient with the nature or gravity of his symptoms, but advised him to enter the hospital at once.

At the time of his arrival the patient appeared very "nervous," excited, and restless, though perfectly rational. He could not remain seated, but in the course of a few minutes, while conversing, would walk about the room, throw himself on the bed, and then suddenly jump up and sit in a chair. His expression was anxious, although he did not seem troubled about himself, and complained only of the paroxysms, which came on with every attempt at swallowing. He talked rapidly, but with frequent hesitations in the middle of his sentences, as if out of breath,—a circumstance which his wife said she had never noticed before. His mouth was dry, and some viscid saliva stuck to his lips and teeth. The pulse was 88.

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[1] Read before the Boston Society for Medical Observation, October 21, 1878.

A private room was assigned to the patient. He made little or no complaint, and was disposed to converse in a rational and sociable way, but he was very restless, roaming about almost incessantly in quest of fresh air. At six P. M. one sixth of a grain of sulphate of morphia was given subcutaneously, with no apparent effect. At eleven P. M. one fifth was given, and at 2.30 A. M. of the next day one third of a grain. The only effect was to make the patient overstate the length of the short naps which he took. In the morning he reported himself as having passed a very comfortable night and slept several hours, the truth being that he walked the corridors and piazza almost all night, and did not sleep in all over half an hour. At 2.30 A. M. he asked if his paroxysms could be due to the bite of the cat, "for," he said, "a cat hates to get wet, and wetting me always brings on the trouble."

September 10th, ten A. M. The patient is a little more comfortable this morning, and appears less nervous and excited. He had slept from nine to 9.30 A. M.

At eleven o'clock a consultation was held, at which Drs. Cabot, Shaw, Warren, and Curtis were present. A glass of water was offered to the patient, which he refused to take, saying that he could not stand so much as that, but would take it from a teaspoon. On taking up the water in the spoon he evinced some discomfort and agitation, but continued to raise the spoon. As it came within a foot of his lips he began to gasp violently, his features worked, and his hand shook. He finally almost tossed the water into his mouth, losing the greater part of it, and staggered about the room, gasping and groaning. The respiration seemed at this moment wholly costal, and was performed with great effort, the elbows being jerked upwards with every inspiration. The paroxysm lasted about half a minute.

The act of swallowing did not appear to distress him, for he could go through the motions of deglutition without any trouble. The approach of liquid to his mouth, however, would at once cause distress. The same effects were occasioned by wetting the face, by dipping the tip of one finger into a cup of water, by trying to hold a lump of ice in the hand, or by a sudden and strong current of air. On being gently fanned as he sat talking, the patient sprang instantly from his chair, with a look of surprise and alarm, and went into a violent paroxysm similar to those produced by attempts to drink. He described his sensations as resembling those which would result if a pailful of ice-water were suddenly thrown in one's face. Nevertheless, a slight draught, he said, was agreeable, but if it came too strong it took his breath away in a very unpleasant manner. He complained continually of want of air and of oppression, and was all the time moving restlessly about, going into the corridors and on to the piazza, in quest of more air.

The patient did not appear to entertain the slightest suspicion of his being affected with hydrophobia, of which disease he was apparently wholly ignorant; nor did he, at first, seem to connect his sufferings in any way with the injury to his thumb caused by the cat bite. He talked a good deal about his cancer (which was in a state of progressing ulceration), and was enthusiastic and garrulous on the subject of the cure which he supposed had been effected. In order to divert his attention from the graver disorder, the cancer was always spoken of, in his presence, as if it were the interesting feature of his case, and the patient remained to the end in ignorance of the nature of his disease.

At the consultation which was held no doubt was entertained of the existence of hydrophobia. It was decided that the treatment by curare[1] should be instituted, and that the administration of the drug should be persevered in, with rapidly increasing doses, until relief of the paroxysms or the production of commencing toxic symptoms (muscular paresis). It was also decided that, the rectum having first been emptied by an opening enema, frequent nutritive enemata should be injected. The order was consequently given to the attendants to administer every four hours an enema of four ounces, warm water, beef tea, and wine whey being used in turn.

At 2.10 P. M. the first subcutaneous injection of curare, containing one third grain, was given by Dr. G. B. Shattuck, who kindly took charge of the patient for a couple of hours. The drug was procured from Theodore Metcalf & Co., and was imported by them from E. Merck, of Darmstadt. It was in the form of dark brown, hard, dry, glistening fragments, like fine gravel. The solution, containing one part of curare in ten, was prepared in the hospital shortly before being administered.

At 2.20 P. M. respiration superficial, 20 to a minute. At 2.30, a copious opening enema of soap, salt, molasses, and warm water was administered, and operated freely in five minutes. At three, four ounces of wine whey were given per rectum. At 3.15, the pulse was 80, the respiration 22. Face a little flushed. No other change was observed.

At 3.20 P. M., curare one third of a grain. At five, an enema of beef tea (four ounces). At 5.15, curare one third of a grain. Pulse and respiration as before. At six, curare one half grain. No change. At seven, enema of warm water (four ounces). At 8.45, curare three fourths of a grain. No effect was thus far visible, except slight flushing of the face. At nine, curare three fourths of a grain. At 10.45, curare three fourths of a grain.

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[1] For the arguments in favor of this plan of medication see the JOURNAL, March 7, 1878, page 315, and August 29th, page 264.

At eleven P. M. The patient was much more restless; so much so that a night-watcher was found necessary. He complained of shortness of breath, with occasional paroxysms such as have been already described. A slight paroxysm was occasioned by the administration of the last enema. Pulse 90; respiration varying from 40 to 60.

September 11th, 12.45 A. M. Pulse 90; respiration 25 to 30. Curare three fourths of a grain. At one A. M. enema of water (four ounces), by which a slight paroxysm was excited. Patient expressed a suspicion that there was some connection between his present sufferings and the cat-bite. At three A. M. very restless. Curare, a grain. Enema of wine whey, four ounces.

At 3.30 A. M. the patient appeared very weak, and staggered when walking from one side of the corridor to the other. His knees seemed to give way under him. He had hitherto walked with a firm, but somewhat rolling gait, not remarkable in one who had formerly been a seafaring man. Mind clear.

At five A. M. enema of beef tea. Curare, a grain. As the stock of curare in the hospital had given out, a one per cent. solution, kindly furnished by Dr. A. N. Blodgett and previously tested by him, was used. The patient was restless, insisting on going home, and complaining that the curare was making him so weak that he would not be able to walk home. He did not, however, appear particularly weak at this time. As the administration of the last enema had excited a violent paroxysm, and as the attacks were recurring quite frequently, the enemata were discontinued. About this time, early in the morning of the 11th, the patient began to spit large quantities of very thick, tenacious saliva. The act of exspuition was accompanied by violent efforts to throw the spittle as far as possible. At each act of spitting the head was jerked back as the spittle left the mouth, and the lips were drawn away from the teeth, the object of this manœuvre being, apparently, to avoid the contact of the saliva as much as possible.

At 6.15 A. M. the patient, who in the course of the preceding eighteen hours had received six and a half grains of curare, escaped from his watcher, the latter having probably fallen asleep. He ran out of the ward and across the hospital grounds, clambered with great agility and *apparently unimpaired muscular force* (according to the account given by those who saw him) over the high fence, and got into Charles Street. He was soon found in a yard opposite the jail, and was brought back to the hospital without making much resistance. After his return the paroxysms succeeded each other at intervals of from five to ten minutes. Pain in the head was complained of as being constantly present and becoming excruciating during the paroxysms. His attendants were frequently called upon to hold his head and compress his forehead, which proceeding seemed to afford some relief. As the patient felt the approach of a paroxysm he would suddenly spring to his feet from his bed or chair and throw himself on his knees before some article of furniture, against which he would lean, while spitting frantically in the way already described, and screaming, "For God's sake, hold my head, or it will burst!" During the paroxysms, and sometimes between them, he would struggle violently, at times trying to rush out of the room, or to throw himself out of the window. Three men were required to hold him. He made no attempts to bite or scratch, but struck with his fists three or four times. Occasionally he would berate and curse the attendants, insisting that they were imprisoning him, and giving him curare to make him drunk. One of the ward-tenders, whose appearance reminded him of his grandson, was the only person who remained on good terms with him. This attendant he insisted on having near him, and would occasionally caress him and joke with him. At times, his utterances were delirious. He frequently inquired with anxiety whether the sink in his kitchen had been cleaned out last night. His remarks were often jocular, and sometimes somewhat obscene. He perspired freely the whole time.

At seven A. M., curare one grain (Dr. Blodgett's solution). The patient tried to swallow a wineglassful of water, but failed to get more than a teaspoonful into his mouth. At eight A. M. he succeeded in swallowing a wineglassful of cold water; a paroxysm ensued.

At 8.15, curare one and a half grains (Dr. Blodgett's solution). Behavior somewhat less violent; paroxysms less frequent, and rather less severe. Pulse strong and hard, from 96 to 120. At nine A. M. the patient's wife arrived. Her presence seemed to soothe him a little. When he felt a paroxysm approaching he would send his wife out of the room, and let her return when it was over. At the height of the paroxysms he would exclaim that he was going to die, that he could not stand it any longer; but in the intervals he frequently expressed confident hopes of recovery.

At 10.15, curare one and a half grains (hospital ten per cent. solution). Paroxysms about the same. General behavior less violent. At eleven, suffered more than before, if possible. Curare two grains. At 11.30, showed failure of strength. Pulse feeble. Shirt and flannel changed because soaked with perspiration. At twelve, was somewhat easier. Was quite playful and affectionate with his favorite attendant, whose beard he pulled, then laughed, and tried to kiss him.

At one P. M., much weaker. Reclined on the floor, with head resting against a chair. *Paroxysms every two minutes.* No longer asked to have his head held, but wished to be supported so that he could spit more easily. Curare two grains.[1] At 1.20, pulse very weak. His movements appeared feeble, but the paroxysms continued unchanged. At 1.30, pulse imperceptible, breathing rapid, pupils normal, paroxysms still as frequent as before, but each one weaker than the preceding one. About this time he was lifted upon the bed, and while there became excited, and tried to get up and leave the room, displaying *considerable muscular strength* in his struggles. After this he very rapidly grew weaker, lost consciousness, and died quietly, without any paroxysmal phenomena. The paroxysms continued until within a few minutes of death, but were very feeble, and somewhat less frequent than they had been a few hours before.

The autopsy was made by Dr. E. G. Cutler. The brain and spinal cord were placed in hardening fluids and reserved for microscopical examination.

Remarks. — The striking resemblance of a hydrophobic paroxysm to the shock of a shower-bath — a resemblance recognized both by the patient and by his attendants — will, I think, give us the key to the pathological physiology of the disease now under consideration. Let us, then, first investigate, so far as our existing knowledge allows, the analogous dyspnœic phenomena observable under certain circumstances in healthy persons, with a view to ascertaining the nature and mode of production of these manifestations. For this purpose a few facts of experimental physiology relating to the functions of the respiratory centre must be recalled.

Respiration is effected by the alternate contraction and relaxation of certain muscles animated by motor impulses proceeding from the respiratory centre in the medulla oblongata. This nervous centre is constantly at work, supplying the needful amount of motor stimulus to the respiratory muscles. In order that the activity of the respiratory movements may to a certain extent be accommodated to the varying needs of the organism, an arrangement exists by which the activity of the respiratory centre, when excessive, or for the time being superfluous or harmful, can be diminished or even wholly annulled. This result is accomplished by the operation of what is called an *inhibitory* influence. Inhibition, or "arrest," consists in a paralyzing or stilling effect exerted by a centripetal, sensory impression upon an active nervous centre supplying motor stimulus. Inhibitory action is therefore just the opposite of reflex phenomena, though not without analogy to them, for, in the case of a reflex function, an excito-motor influence is exerted, whereas the effect produced by inhibition, on the contrary, is depresso-motor. The well-known experiment of Goltz, in which a frog's heart is suddenly stopped by a tap upon the abdomen, is one of the most familiar examples of inhibition.

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[1] These last doses of curare were, to say the least, superfluous. I do not believe that I should have allowed them to be given if I had been able at that time to be present. I was, however, engaged in operating upon a case of strangulated hernia, and could not then give my attention, as I should have wished, to the hydrophobic patient. The last doses were administered, in accordance with the instructions given at the outset, for the reason that the paroxysms were growing more and more frequent, and that the patient's struggles were still at times very vigorous. In fact, with the exception, perhaps, of the profuse perspiration, no unequivocal signs of curare-poisoning, not attributable to the progress of the disease itself, were observed. I am, however, persuaded that it must be very difficult, if not impossible, to discriminate between the toxic effects of the drug and the natural symptoms of the disease in its advanced stage. My reasons for this opinion will be given later. — T. B. C.

Of all the inhibitory influences to which the respiratory centre is subjected, none is more typical of inhibition in general, or more striking in the directness, completeness, and simplicity of its action, than that exerted by the *superior laryngeal* branch of the vagus. Rosenthal's experiments, confirmed by Claude Bernard and many others, and also borne out by the recent researches of Bukart,[1] show that when the central end of this nerve is stimulated, after its denudation and division, respiration is immediately suspended, the diaphragm, paralyzed and relaxed, being thrown into an attitude of extreme expiration.[2] According to Brown-Séquard, the same result can be produced by direct irritation of certain parts of the medulla. Respiration ceases, the heart continuing to beat for a while more or less rapidly and strongly. "This arrest of respiration," he says, "is *not due to a reflex spasm* of the diaphragm or of the intercostal muscles, but to a cessation of action of these muscles, caused without doubt by the cessation of action of the respiratory centre." [3]

A similar influence — ranging in the intensity of its effects from the production of a more or less marked condition of breathlessness, dyspnœa, gasping, or respiratory distress and anxiety to sudden death by paralytic apnœa — is exerted by a variety of peripheral stimuli. Thus Schiff has shown that powerful excitations of the nerves of general sensation, particularly of the fifth pair, cause slowing of the respiratory movements. It is not only the nerves of sensation, conscious or unconscious, which can thus convey an inhibitory influence to the respiratory centre. A similar effect is produced by psychical impressions (exciting or depressing emotions) proceeding from the emotional regions of the brain to the medulla. This fact is exemplified by the breathlessness which is experienced under circumstances of great alarm or excitement, as well as by the depressed state of the respiratory function caused by profound grief. In the latter case arrears of breathing have to be made up by frequent semi-volitional sighs.

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[1] Pflüger's Archiv, vol. xvi. page 427. Revue des Sciences médicales, vol. xii. page 424.

[2] According to Arloing and Tripier (Archives de Physiologie, etc., vol. iv., 1871, page 735) the left vagus is chiefly concerned in controlling the respiratory centre, while the activity of the heart is principally under the influence of the right vagus.

[3] Archives de Physiologie, etc., 1869, page 767.

As in the case of bodily pain, this physiological function of respiratory inhibition, though familiar to us chiefly by its unpleasant or harmful manifestations, really subserves a useful end in providing a means of protection for the respiratory organs against injurious external agencies. The superior laryngeal nerve, whose inhibitory influence is so remarkable, supplies sensation to the mucous membrane of the base of the tongue, of the upper part of the anterior wall of the œsophagus, of the epiglottis, and, lastly, to the laryngeal mucous membrane. When stimulated by an irritating contact, such as attends the penetration of foreign bodies, liquids, or irritating vapors and gases into the air passages, paralysis of the diaphragm at once takes place, with *extreme expiratory relaxation*, so that inspiration is rendered for the time being impossible. The further penetration of the irritating agent is thus prevented.

This same protecting agency is brought into play in every normal act of deglutition to prevent the entrance of solid or liquid food through the glottis. "The first requisite for the act of swallowing," says Professor Dalton,[1] "is the suspension of respiration. This takes place at the beginning of deglutition by a nervous mechanism which it is difficult to describe, but which may be designated as an 'action of arrest.' The same nervous impression which excites by reflex action the constrictors of the pharynx suspends for a time the movements of inspiration. This effect is very perceptible in the ordinary act of swallowing, and was witnessed by Waller and Prévost in many of their experiments on this subject; galvanization of the central extremity of the superior laryngeal nerve causing immediate relaxation of the diaphragm, with stoppage of its movements."

Swallowing is not the only physiological act normally attended by respiratory inhibition. The act of inspiration itself, according to Wundt, is a constantly recurring cause of the same phenomenon. When the lungs are fully inflated an inhibitory impression is conveyed through certain fibres of the vagus to the respiratory centre. Inspiration is thus rendered, as it were, self-inhibiting.

Without dwelling further on our experimental knowledge of this function of the nervous system, I will briefly recall a few familiar illustrations of its effects as witnessed and experienced in human beings. In the first place, all persons know the uncomfortable sensations caused by a shower-bath, consisting in breathlessness and respiratory distress, often attended by great anxiety or even terror, and most marked in children, and in timid, emotional, so-called "nervous" persons, in whom there is reason to believe that the emotional regions of the hemispheres are but imperfectly under the control of the higher (volitional and rational) cerebral functions. The same distressing state of apnœa is not unfrequently caused in sea-bathers by wading into the sea, and some persons find themselves wholly unable to withstand the deterrent effect so produced. Water splashed in the face and on the chest has a similar action, as also submerging the face in a basin of water. A glass of strong, hot, steaming punch will sometimes "take one's breath away" by the same mechanism.

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[1] Physiology, sixth edition, 1875, page 367.

Sudden death by apnœa, caused in the same way as the transient disturbances mentioned above, occasionally takes place. Such, for instance, is the mechanism of sudden death in tracheotomy, in fractures and other violent injuries of the larynx, and in garroting.[1] The mysterious drowning of expert swimmers, who suddenly sink, with or without a cry of distress, — an accident commonly attributed to a supposed "cramp," — may, perhaps, also be due to respiratory inhibition with expiratory relaxation of the diaphragm, resulting from the penetration of water into the larynx. The immediate sinking of the swimmer would thus be accounted for. Of all the examples of sudden death due to this agency, however, none is more interesting than the fatal accident which occasionally takes places in the first stage of chloroformization.[2] In such cases respiration suddenly ceases, the heart continuing for a short while to beat,[3] as in Brown-Séquard's experiments alluded to above. According to this view, the so-called "chloroformic idiosyncrasy," invented to account for certain inexplicable deaths caused by the inhalation of chloroform, consists simply in an exceptional susceptibility to respiratory inhibition, originating, perhaps, in emotional or traumatic collapse. Herein lies the great superiority of ether over chloroform. In consequence of its pungent odor, ether undoubtedly occasions a certain degree of initial respiratory distress, lasting until the mucous membranes exposed to its vapor have become locally anæsthetized. Its local action, however, is far less irritating than that of chloroform, and it has never, I believe, been known to cause sudden death in the first stage of administration, in the unexpected way peculiar to chloroform.

The last illustration of respiratory inhibition in disease which I shall adduce is perhaps somewhat hypothetical. The opinion has been advanced that paralysis of the diaphragm might be one of the causes of asthmatic attacks.[1] However this may be, one would certainly expect that so important a function as respiratory inhibition would, like all the other physiological functions, be liable to morbid derangements. It seems, therefore, rather surprising that its disturbances should have played so small a part in pathology.

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[1] Leven has shown, by experiments on animals, that a ligature tied around the trachea, so as to constrict it somewhat, without preventing the passage of air, causes immediate slowing of the respiration, and that a ligature tied tightly around the trachea causes instant death. If, however, the vagi are previously cut the ligature no longer causes sudden death, but kills more slowly by asphyxic accumulation of carbonic acid. Archives de Physiologie, etc., 1870, page 176.

[2] Mathieu and Urbain attribute certain deaths by chloroform to the arrest of respiration, caused by irritation of the laryngeal mucous membrane. Archives de Physiologie, etc., vol. iv., page 586.

[3] Giraldès. Nouveau Dictionnaire de Médecine, etc., article Anesthésie, vol. ii., page 246.

(*To be concluded.*)

CARDIAC EMBOLISM FOLLOWING DELIVERY.[2]

BY JOHN L. SULLIVAN, M. D., MALDEN.

Mrs. C. F. B., American, in good circumstances, was delivered of her first child, a vigorous female, weighing eight pounds, on the evening of March 6th. Previous to her confinement I saw the lady once, when I gathered the following particulars: Parents both living, and in good health. Her own health during childhood and before marriage usually good. When quite young she had typhoid fever, a mild form, from which she recovered without drawback. Several years ago, after violent mental emotion, was attacked with distressing palpitation, which soon ceased, and which did not prevent her attending a ball given on the same night, and dancing every "set" without inconvenience. Since then no cardiac symptoms of which she was aware, and none now discoverable by auscultation. At times troubled with leucorrhœa. During gestation health seemed to improve, "pregnancy agreeing with her;" had experienced, however, especially during the latter months, a sensation of "inward heat," as she described it, which enabled her to endure without discomfort a lower temperature than was agreeable to other persons, and to dispense with warming the rooms which she occupied.

The labor was in all respects natural, and easier than falls to the lot of most women with the first child. Head presentation, right occipito-anterior. Duration, from the earliest indication of uterine action to the expulsion of the placenta, ten hours. A few moments after the birth of the child, the after-birth, expedited by external pressure, came away; the uterus contracted immediately to the typical cricket-ball size and "feel," so gratifying to the accoucheur; and when, half an hour later, I retired, both mother and child seemed "as well as could be expected."

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[1] Bamberger, quoted by J. B. Berkart, on Asthma, London, 1878, page 37.

Professor Sée asserts that "the dyspnœa of asthmatic patients is due, in the immense majority of cases, to a centripetal excitation of the vagus and of the superior laryngeal nerve." Nouveau Dictionnaire de Médecine, article Asthme, vol. iii., page 630.

Dr. B. Edson recently reported a case of severe dyspnœa under the title of Paralysis of the Diaphragm. (New York Medical Record, September 21, 1878, page 229.) The opinion was subsequently expressed that Dr. Edson's case might have been hay fever of a somewhat exceptional character. (W. C. Wey, New York Medical Record, October 12, 1878, page 289; G. M. Beard, New York Medical Record, November 2, 1878, page 348.)

[2] Read before the Boston Obstetrical Society, April, 1878.

March 7th. This morning Mrs. B. was reported by the nurse to have "flowed more than usual during the night," a symptom which could not be attributed to relaxation of the womb, as that organ was found, on examination, in the same state of firm contraction it had assumed the previous night. Opium and ergot were ordered in moderate doses every third hour.

March 8th. This forenoon, on attempting to sit up in bed to pass water, the patient voided a considerable quantity of dark coagula, which had accumulated in the vagina, and for a few moments afterwards was faint. On my arrival, however, I found her quite recovered, that is, in good spirits, neither blanched in countenance nor presenting any symptoms of exhaustion. There was no subsequent hæmorrhage, although the opium and ergot were omitted, and the lochia henceforward continued scanty in quantity and greenish in color; in short, quite normal. The voiding of the coagula and the nurse's estimate of the amount of blood lost during the night following delivery are recorded not as important in themselves, but as forming part of the clinical history of an unfortunate case.

March 9th. Very comfortable; pulse 80; temperature 99° F.; appetite good; bowels open; urine copious, and of good color.

March 10th. I shared to-day the patient's disappointment (she was anxious to suckle her infant) not to find some evidence of activity in the breasts, which were more flaccid than yesterday. Other symptoms favorable.

March 11th. The breasts are still quite soft. This P. M. Mrs. B. complained of a disagreeable sensation suddenly felt in the inside of the left leg and thigh, which she described as "something between a numbness and a chilliness." This sensation speedily vanished, leaving behind it no trace of pain, swelling, redness, heat, or tenderness on pressure. And at no subsequent period in the progress of the case could any of these symptoms be detected, although inquiries were made, and the limb, including the groin, examined in its entire length at each visit. One hour after the above-described attack she was seized with violent and distressing palpitation resembling that experienced on the afternoon preceding the ball. Thereupon she burst into a paroxysm of hysterical weeping and sobbing. At this moment I entered the room. "Oh, doctor," she exclaimed, "I have that heart trouble again!" I was not long in ascertaining that something unusual had happened, for the heart was indeed beating with fearful rapidity, unlike anything I had ever before observed, attended with a heaving impulse in the præcordial region visible through the clothing. It was impossible to count the pulse at the wrist, or to determine its frequency by auscultation. It could not have been, however, less than 200 per minute. Both sounds of the heart were distinctly audible, and were accompanied with a bruit or whiff which suggested the puff of a locomotive engine at full speed.

The respiration was somewhat quickened (32 per minute), but not in proportion to the pulse. Moderate difficulty of breathing was complained of, but there was no perceptible lividity of the lips or face, and the expression was not in the least anxious or distressed, so that as soon as the patient's tears were dried, and she had recovered her wonted composure, she did not *look* ill. Temperature 101°. Urine drawn by the catheter and tested for albumen, etc., gave negative results.

A mixture containing tr. castor, tr. digitalis, with spirits of nitric and sulphuric ether, was directed to be taken hourly.

March 12th. This morning Mrs. B. welcomed me with a cheerful smile, and in accents equally cheerful informed me that she was much better, — a favorable impression which I was unable to corroborate, her condition having certainly not improved. On the contrary, the pulse had become weaker, and, if possible, more rapid; the temperature had risen to 103°, and the respiration to 40 per minute. Since my last visit she had assumed the left lateral posture (with the knees drawn up), from which she could not be moved on account of the increased difficulty of breathing induced by the slightest change in her position. Notwithstanding this ominous circumstance she insisted that she had been greatly relieved by her medicine, predicted a speedy recovery, and had evidently no suspicion of impending danger. And indeed her countenance was so animated and cheerful, her expression so natural, and her general appearance so strikingly in contrast with the apparent gravity of her other symptoms that it was difficult to accept the conclusion that death was inevitable, and at hand. Still, I felt it a duty to communicate to her friends my convictions that the case was one of cardiac embolism, which would prove fatal in a few days at furthest, possibly in a few hours.

March 13th. At my request Dr. Minot saw the patient to-day. After examining the case with great care, and fully recognizing its alarming features, he ventured to express a faint hope, unhappily destined to disappointment, that we might have to do not with embolism, but with hysteria simulating that condition. Agreeably to his suggestion, the digitalis was continued in larger doses, and the same nourishing and sustaining measures that had been employed from the beginning were still persevered with. Temperature 106.5°; respiration 48–52; pulse as heretofore.

March 14th. Much worse; left knee swollen and painful; one half of right breast perfectly soft and flaccid, the other half swollen, livid, and tense; the entire left breast in the same swollen condition; tongue swollen to four times its natural size, hard, very painful, and protruded with great difficulty; deglutition well-nigh impossible; voice inaudible; orthopnœa; failing pulse; restlessness; jactitation. Death occurred at six o'clock P. M., consciousness being retained to the last moment.

An autopsy was refused.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY O. F. WADSWORTH, M. D.

Division of Ciliary and Optic Nerves; a Substitute for Enucleation. — The idea is not altogether new, though it has only recently been put in practice. According to Boucheron, Rondeau suggested it in a thesis in 1866. Von Graefe[1] referred, in the following year, to division of all the ciliary nerves behind the eye to prevent sympathetic ophthalmia only to pronounce it incompatible with preservation of the eye. Boucheron[2] proposed division of opticus and ciliary nerves as a general substitute for enucleation, and gave directions for the operation as he had performed it on the cadaver. He had convinced himself by experiments on cats and dogs that in most cases the eye could be saved after the operation. Cases of trauma, and operations by Knapp, Gruening, and Mauthner on tumors of or surrounding the optic nerve have shown that the optic and the greater part at least of the ciliary nerves may be divided, and the form and appearance of the eyeball retained.

Schoeler's[3] paper is a valuable contribution to the subject, and demonstrates the complete practicability of the procedure. He recommends optico-ciliary neurotomy instead of enucleation in all cases in which the latter is indicated, except those of malignant tumors. In his enthusiasm for the new method he is perhaps somewhat unjust to the old. The disagreeable features which often attend the condition following enucleation — the increased and altered secretion from the conjunctiva, and its overflow upon the skin of the lower lid; the turning in of the lashes, and consequent irritation when, on account of the expense or from other cause, an artificial eye is not worn; the immobility of the artificial eye, and the danger of exciting inflammation of the conjunctiva from the pressure of its edges when one is worn — are strongly emphasized. Enucleation is characterized as "the most hateful of all operations on the eye," and he even seems disposed to believe, though he does not actually assert, that the "preservation of the most misshapen eye is of greater advantage to the patient than the finest artificial eye." This is not, however, from objection to the artificial eye *per se*, since one of the great advantages of retention of a phthisical eye is found in the facility of motion which it imparts to the artificial eye worn over it.

The operation advised is as follows: the eye is rolled inward by an assistant, the external rectus is tenotomized, and a catgut suture passed through the muscle and overlying conjunctiva. Then the conjunctiva is divided from the inferior to the superior rectus, and dissected up with curved scissors, keeping close to the globe, till the opticus is reached.

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[1] Berliner klin. Wochenschrift, 1867, page 320.

[2] Gazette méd. de Paris, tome v., page 442, 1876.

[3] Jahresbericht ueber die Wirksamkeit der Augenklinik, Berlin, 1878.

The optic nerve is cut with enucleation scissors. If there be now much bleeding, the lids are closed and pressure made on them with a sponge for a few minutes. Has bleeding ceased, the globe is rolled strongly inward, and the ciliary nerves severed by a neurotome shaped like a strabismus hook. Now, the globe being rolled inward while pressure backward is made on the outer commissure, the stump of the opticus may be brought into view, and the assurance obtained that all nerves have been divided. Finally, the rectus externus is united to its tendon by the suture, and a compressive bandage is applied.

Schoeler has operated in ten cases. In seven of these there was tenderness in the ciliary region; in one a staphylomatous leucoma, with ciliary neuralgia; in one severe pain in an eye blind from glaucoma; in one the eye was enlarged and staphylomatous. Six of the eyes were already diminished in size before the operation. In these the operation was easily performed, the accompanying bleeding of small amount, the exophthalmos following section of the opticus inconsiderable, and healing took place in from three to eight days. When the eye was enlarged or of normal size the operation was more serious. In two such cases there was at first so great an amount of exophthalmos that in the one the lids could not be wholly closed; in the other the eye was pushed in front of the lids. Both, however, eventually did well. In these two cases there was no tenotomy of the external rectus, the wound in the conjunctiva extended only between two of the recti muscles, and after division of the opticus no pressure was made to check bleeding, and it is to these circumstances that Schoeler refers the exceptional degree of exophthalmos.

In a discussion on the subject in the Berlin Medical Society, Hirschberg[1] warmly defended enucleation against the objections made to it by Schoeler, but he has stated more recently[2] that he has since performed optico-ciliary neurotomy twice with satisfactory results: once on account of ciliary pain in an eye blind and with atrophied cornea, once for severe cyclitis in an eye lost years before by injury.

Schweigger[3] also is evidently in favor of the new operation, though it does not appear how extensive his experience with it has been. He prefers to divide the internal rectus and reach the nerves from the nasal side of the eye, keeping carefully within Tenon's capsule. If the globe be atrophic, section of the optic nerve in this way presents no difficulty; if not atrophic, it may be advisable to seek and stretch the nerve with a strabismus hook, to enable its easier division. After section of the opticus the posterior pole of the eye may be readily rotated into view and complete division of the ciliary nerves effected. Schweig-

[1] Berliner med. Wochenschrift, 1878, page 292.

[2] Centralblatt für practische Augenheilkunde, Juni, 1878, page 133.

[3] Ueber sympathische Augenleiden. Berliner klin. Wochensch., 1878, No. 20.

ger has seen no considerable hæmorrhage follow this method, provided he had succeeded in keeping within the capsule, and healing had always been rapid and favorable. Both Hirschberg and Schweigger found curved scissors all that was necessary for cutting the nerves.

The treatment is as yet too recent and the number of cases in which it has been tried too limited to allow a positive estimate as to the extent to which it may profitably be employed. There are two important points especially with regard to which further information is to be desired. Aside from intraocular tumors the avoidance of sympathetic inflammation is the most weighty indication for the performance of enucleation. Reunion of the ciliary nerves after their division behind the eye would bring with it renewal of the opportunity for sympathetic inflammation, and although this does not, under the conditions which exist, seem probable, the opposite cannot as yet be assumed with certainty. Nor in cases where the cornea is present can it now be told how great is the subsequent danger to that tissue rendered insensible by the operation. In two of Schoeler's cases ulceration of the cornea did occur within a short time after the operation, but healed readily under appropriate treatment. At the worst such ulceration would be unattended with pain.

Amblyopia from Tobacco and Alcohol. — Horner[1] has found this disease very frequent in Zurich, and the symptoms very characteristic and constant. In twenty-eight months he observed sixty-eight cases, 0.7 per cent. of all eye diseases. All were men; most were between forty and fifty years of age, few between twenty and thirty. Usually these patients see better by twilight or in shadow than in bright light. The disturbance of vision, which may even reach such a degree as to admit only of counting fingers at a few feet, generally appears rapidly,[2] and is of nearly equal amount in both eyes; indeed, a marked difference in the vision of the two eyes, when no other affection (cataract, macula corneæ, etc.) can be found to explain it, gives ground for suspicion that the disease is not a pure intoxication amblyopia, and alters the prognosis. The field of vision is not narrowed, but the main symptom of the disease consists in an inability to distinguish red and green in a small district around the point of fixation, where blue and yellow, however, are easily recognized. This symptom was present in forty-seven out of fifty-five patients in whom it was sought. Ophthalmoscopically, a constant change is observed in the optic disc: its outlines are well defined, but its whole surface is duller, less transparent, than normal; its nasal third is of a dirty red; its temporal two thirds incline more to a grayish-white color. This is a dull porcelain-white, differing decidedly from the chalky-white of atrophy following neuritis, the yellow-white with choroiditis, or the steel-gray seen in locomotor ataxy.

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[1] Correspondenzblatt für Schweizer Aerzte, 1878, 13. Centralbl. für pract. Augenheilkunde, August, 1878.

[2] As regards this point all observers do not agree with Horner. Förster (Graefe-Saemisch Handbuch, vii. page 204) says the beginning of the failure in vision comes on very slowly, though it is generally a later, more rapid loss of vision which first leads the patient to seek advice. The experience of the reporter agrees with that of Förster.

Examination into the history of these cases always reveals the typical symptoms of chronic gastric catarrh, and after this has existed for some time its more marked manifestations always coincide with the occurrence of failure of vision. Horner insists that it is only after long continuance of gastric catarrh that vision is affected, however great the abuse of alcohol or tobacco has been.

None of the theories proposed to explain these cases is quite satisfactory. That which supposes a partial neuritis implicating only those fibres going to the macula is hardly tenable, since good sleep for a single night may bring about rapid improvement in vision, while sight may become worse and the color scotoma enlarged under the influence of temporary fatigue. Again, the supposition that all depends upon anæmia alone is insufficient, though more is to be said in favor of this, for the lack of nutrition which accompanies the disturbance of the stomach is the exciting cause of the disease. There is no direct poisonous action of nicotine or alcohol on the retina or optic nerve. It appears most plausible to regard the scotoma as what may be called a fatigue scotoma, dependent on lack of nutrition and failure of general strength. Unfortunately there is no evidence as to the pathological anatomy.

The prognosis is good in uncomplicated intoxication amblyopia, though the failure of sight be very great, if only the field of vision be not contracted. Sexual abuses or much depression of strength from overexertion are unfavorable elements. Abstinence, morphia at night if necessary to procure sleep, and remedies directed to the cure of the catarrhal affection of the stomach are all that is required in the way of treatment. Karlsbad salts dissolved in warm water and taken in the morning fasting are usually efficacious.

Extraction of Iron from the Eye by the Magnet. — An interesting case is reported by Hardy.[1] Forty-eight hours after the injury a small, narrow strip of steel was seen resting on the anterior surface of the lens, so situated as to be covered by the iris unless the pupil was dilated. Only a small part of the lens behind the bit of metal was opaque. Twenty-four hours later the effect of a powerful electro bar-magnet outside the eye was tried. When the pole of this magnet had been approached to a distance of four inches from the cornea the chip was seen suddenly to spring away from the lens to the posterior surface of the cornea. On removal of the magnet the metal fell to the bottom of the anterior chamber, and was then extracted through an incision made as for iridectomy. The lens became afterward opaque throughout, and was then gradually absorbed.

[1] Medical Times and Gazette, April 13, 1878, page 401.

M'Keown[1] in two cases was also successful. A man was wounded in the eye by a small piece of metal. Three days later the iris was found attached to the lens at the outer edge of the pupil, and there a metallic body was adherent. An attempt to seize the body with forceps failed, but on the introduction of a pointed permanent magnet the iron was instantly attracted and withdrawn. The patient was under observation for a month, and the limited opacity of the lens which had at first been present at the part where the foreign body rested did not increase.

In the second case the value of the magnet was still more strikingly shown. A chip of steel from a hammer had struck the right eye. Within an hour after the injury there was found a wound a little more than a line long at the sclero-corneal junction. The wound was quite clean, and no foreign body visible ; but that it had penetrated was evidenced by the evacuation of the aqueous and a slight displacement of the iris. The media were clear, and the ophthalmoscope did not bring the body into view. The point of the magnet was placed in the wound, and a click at once proved the presence of metal within the sclerotic. By a little manipulation of the magnet the end of a piece of steel a line and a half long was brought into position to be caught by forceps, and drawn out. Recovery was complete. Here the foreign body would have probably been undiscovered but for the magnet, and have afterward caused destructive inflammation of the eye ; even if detected, removal by other method would have necessitated the enlarging of the original wound in a region specially apt to react unfavorably.

PROCEEDINGS OF THE PROVIDENCE MEDICAL ASSOCIATION.

G. W. PORTER, M. D., SECRETARY PRO TEM.

OCTOBER 7, 1878. Dr. R. F. Noyes read a paper on The Cæcum and Appendix Vermiformis, of which the following is an abstract: —

The size of the cæcum; its position in the abdominal cavity; the arrangement of the peritonæum upon its anterior and lateral surfaces only; the collection of cellular tissue upon its posterior surface; the attachment of a rudimentary appendix; the connection with the small ileum on the one hand, and with the ascending colon, yet smaller than itself, on the other, tend to render it of peculiar interest. Again, the absence of the villi, the corrugated condition of the mucous membrane produced by the peculiar and comparatively tense arrangement of longitudinal muscular fibres, and the position of the ascending colon indicate at once the performance of functions distinct from those going on in

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[1] Lancet, August 24, 1878, page 253.

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the ileum above, and imply that its contents must pass slowly through this portion of the large intestine.

The mechanical, chemical, and catalytic action of digestion are not sufficient to reduce to a fluid and an absorbable condition all substances which may be introduced into the alimentary canal as food or with the food. Seeds of fruits pass directly through unchanged, and under proper conditions germinate. The epithelial layer of various cereals and the tough and elastic portion of animal tissues almost always pass undigested. The activity of the villi and lacteals is so great that the contents of the small intestine suffer at once great depletion, and eventually nothing but a brownish, gruelly material remains, which, together with indigestible substances, is forced through the ileo-cæcal valve into the cavity of the cæcum. The exact function of this viscus is not distinctly understood. Its secretion and that of the appendix vermiformis appears to be alkaline in its reaction, and has for its office the conversion of starch into sugar, the semi-liquefaction of fæces, and the lubrication of the large intestine, The lactic and butyric acids so generally present are accounted for by the decomposition of the saccharine materials. Within a short time the contents of the cæcum assume a fæcal odor. This is not due to a decomposition of its contents, or to any putrefactive change, but according to Tiedmann and Gmelin is dependent upon the secretion of a volatile oleaginous material. Here, too, sulphureted hydrogen is generated.

The derangements of the cæcum and its appendix are naturally divisible into functional disturbances, inflammation of its walls (typhlitis), perforating ulcer of the cæcum, perforation of the cæcum and its appendix from foreign bodies, and perityphlitis.

The cæcum at times becomes enormously distended. This distention may depend upon a torpid and distended colon, upon a paucity of the cæcal alkaline secretion, or upon a weakened and debilitated condition of the cæcum itself. The difficulties dependent upon this distention may be enhanced by the presence of calculi, entozoa, and foreign bodies.

Ordinarily from the impaction of fæces and the accumulation of gas pain in the right iliac fossa, more or less paroxysmal, is complained of. Vomiting is frequently observed. Pain and numbness of the thigh, retraction of the testicle, and frequent micturition are sometimes present, depending upon irritation of the last dorsal and genito-crural nerves.

Typhlitis. — The mucous membrane of the intestinal canal is more susceptible to irritation and inflammation during the period of childhood and adolescence than later. Typhlitis is known by pain and marked tenderness upon pressure in the right iliac fossa; tympanites, at first local, afterwards general; tumor in the right iliac region frequently due to an effusion behind the cæcum, and often observed by localized enlargement of the abdominal parietes. In typhlitis, too, we have vomiting, sometimes stercoraceous, depending upon the degree of obstruction. The bowels are constipated. At first the pulse may not be much accelerated, but soon it becomes more rapid, varying from 100 to 120. The *facies* becomes anxious, and the patient lies upon the right side with thighs flexed upon the abdomen.

A case of typhlitis not long since came under my observation. My patient first experienced severe non-localized pain, paroxysmal in its nature, in the abdomen. Shortly, in the right iliac fossa, there was observed a tumor, tympanitic upon percussion. Soon vomiting became a prominent symptom. The bowels were confined. The pulse rapidly increased in frequency. In the morning I found it 80, in the evening 130. The countenance assumed an anxious expression. The thighs were flexed upon the abdomen. By the free administration of morphia hypodermically, by the assiduous use of hot fomentations and turpentine stupes to the abdomen, by warm enemata and the use of the rectal tube, together with champagne as a stimulant and calomel as a laxative, I was enabled to carry my patient through.

Perforating Ulcer of the Cæcum. — Perforation of this viscus may occur in dysentery, phthisis, and carcinoma. Professor Roberts Bartholow[1] refers at some length to an idiopathic perforating ulcer of the cæcum. In the cases observed by Professor Bartholow the site of the ulcer was in the great majority of cases upon the posterior portion of the cæcum. The ulcer was cleanly cut, and most of the cases were preceded by a diarrhœa for some time prior to the perforation.

Ulceration and Perforation of the Cæcum from Foreign Bodies. — A foreign body may be arrested in the cæcum, and produce ulceration and perforation of this viscus. The gravity of the perforation will very much depend upon its site. If the foreign body lodges in the anterior or lateral portions of the cæcum, adhesions not having formed, and perforation occurs, collapse or general peritonitis rapidly terminates the case.

Several years ago I was called to see Mr. X., aged thirty-one, a grocer, previously healthy. I found him with severe pain in the right iliac fossa. There was no tympanites, no tenderness upon pressure. The pulse was 84, the temperature normal. Thirty-six hours from the invasion of the attack the pulse was 130, tympanites marked, and the patient suffering from general peritonitis. Notwithstanding the administration of opium, stimulants, and counter-irritation, he sank, and died upon the fifth day from the invasion of the attack. Autopsy revealed evidences of general peritonitis. There was a perforation of the cæcum at its junction with the appendix. An intestinal concretion about as large as a small marble was found in the cavity of the appendix.

If, as more frequently happens, the posterior portion of the cæcum is the site of the perforation, perityphlitis results. This affection is usually dependent upon typhlitis, or is due to perforation of the cæcum or its appendix. Perityphlitis not dependent upon perforation may terminate in resolution, or it may go on to the formation of iliac abscess. Perityphlitis due to perforation always culminates in suppuration. In this event grave constitutional symptoms are soon present. Chills and rigors, followed by profuse sweating, tumor, pain and tenderness upon pressure at the seat of disease, exhausting diarrhœa, and furred tongue announce the local production of pus. Suppuration having occurred the pus may pursue one of a variety of courses. It may pass into the intestine perhaps through the identical opening which caused the original inflammation. It may find its way into the peritoneal cavity, producing fatal peritonitis. It may point and open in the right iliac fossa, or the pus may descend and the abscess point under Poupart's ligament. Finally, it may extend upwards, and point near the crest of the ileum.

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[1] American Journal of the Medical Sciences, October, 1866.

In making the diagnosis of iliac abscess it is well to bear in mind the position of the pus in psoas abscess and in Pott's disease of the spine. The practitioner should remember that the abdominal parietes in the right iliac region may be the seat of phlegmonous inflammation; he should think of the symptoms of an inflamed right ovary; he should recall the characteristic features of pelvic cellulitis; and he should remember that renal disease may produce pain in the course of the genito-crural nerve. Iliac abscesses upon pointing, as a rule, do not present that red appearance which is seen in the pointing of abscesses generally.

Ulceration and Perforation of the Appendix Vermiformis. — Perforation may occur without the presence of foreign bodies. Extraneous bodies, however, are frequently the cause of ulceration and perforation. These upon gaining access to the cavity of the appendix may remain a long time without producing any disturbance, when suddenly they may inaugurate an ulcerative process, which, culminating in perforation, may cause a localized and soon a general peritonitis; or nature, anticipating the perforation, may be kind enough to produce adhesions of the different layers of the peritonæum, thus forming the walls of an iliac abscess. In this event the perforation culminates in a localized collection of pus. It is highly probable that the alkaline viscid secretion of the appendix may sheathe and protect its mucous membrane for a long time from the irritation of the foreign body, when at last from some derangement of its glands the secretion becomes less protective in its nature, and the appendix at once feels the presence of the foreign element.

Two fatal cases of perforation of the appendix have fallen under the observation of Dr. Hill, of Providence. Upon one of these subjects I made an autopsy. In the other case Dr. Hersey, in my presence, made the post mortem. I am indebted to Dr. Hill for the following history: Both patients were males; the age of one was twenty-one, that of the other twenty-two. In both there was pain in the abdomen. In one it was localized in the right iliac region from the beginning. In one there was a tumefaction, in the other none. In both the pulse was accelerated, varying from 110 to 120. In both the bowels were confined, and there was vomiting. In one the vomitus was stercoraceous. In both there was general tympanites. In one there was a decided chill, in the other chilly sensations. In one there was delirium, in the other none. Death resulted in one case in five days, in the other in seven days. Autopsy revealed in both general peritonitis, pus in the peritoneal cavity, with elongation and perforation of the appendix. In both there was an intestinal concretion in the cavity of the appendix. The appendix as a result of inflammation may attach itself to the parietal layer of the peritonæum, to the bladder, rectum, and other of the abdominal viscera. The pus in iliac abscess is considered by Sands and Kelsey, and was considered by the late Dr. Krackowitzer, to lie outside of the peritoneal cavity.

Prognosis. — Perforation of the appendix is far more fatal than the same affection of the cæcum. Professor Bartholow[2] said that "he did not know

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[1] American Journal Medical Sciences, October, 1866.

of a single well-authenticated case of recovery following perforation of the appendix."

Since that time Dr. Wm. Pepper,[1] Professor Weinlechner,[2] of Vienna, and Dr. H. B. Sands have each reported a case of recovery from perforation of the appendix vermiformis. Of forty-seven cases of disease of the appendix vermiformis tabulated by Dr. Lewis, forty-six died.

Treatment. — The functional disturbances should be treated with laxatives. Drastic cathartics should not be employed. Copious warm oleaginous and solvent enemata are used with much advantage. Hot fomentations and turpentine stupes are highly useful. Typhlitis and perityphlitis are best treated with opium, laxatives, leeches to remove the congestion, enemata, and hot fomentations. Turpentine stupes are important, and such other antiphlogistic treatment as may suggest itself to the practitioner. Iliac abscess is best treated by incision, after the method inaugurated by Dr. Hancock in 1848, and revived by Dr. Parker. An incision just above and parallel to Poupart's ligament, extending through the abdominal parietes to the transversalis fascia, relieves at all events the tension, and renders the external pointing of the abscess the more probable. A hypodermic syringe determines the diagnosis. Just here the skill of the surgeon is brought into requisition. If he has reason to believe that adhesions have formed he will succeed best by extending his incision, and allowing the pus to escape. Dr. Parker recommends that the incision should not be made before the fifth day nor after the twelfth.

I have read the account of fifteen cases, and have taken from Dr. Gouley's paper[3] fifteen more. Of these thirty cases treated by incision there have been twenty-seven recoveries and three deaths.

An interesting discussion of Dr. Noyes's paper, in which Drs. O'Leary, Mitchell, Hersey, Radcke, and Brown took part, is omitted for want of space.

JONES'S AURAL SURGERY.[4]

THIS work is a republication of the author's papers entitled Practical Remarks on Aural Affections, which appeared in the *Medical Press and Circular*. It is intended, as the preface states, to give the busy practitioner and student a concise epitome of modern aural diagnosis and therapeutics. In a work with this professed object we should have expected that attention would have been directed to the pathological conditions found in the ear, and to the application of the general principles of surgery and medicine for the relief of these conditions; we should look for thoroughness in touching upon all the important points relating to the ætiology, diagnosis, differential diagnosis, and treatment of the various diseases. With all this a systematic arrangement is necessary to facilitate easy reference. In all of these particulars the work seems wanting. There is no attempt to apply general principles or to give the "indications" for treatment; not the slightest description of the pathology, and scarcely a word on the ætiology of the diseases; but little description of the appearances seen on inspection is given, and nothing at all on differential diagnosis.

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[1] American Journal Medical Sciences, July, 1867.

[2] Medical Record, vol. x., page 223.

[3] Transactions New York Medical Society, 1875.

[4] *A Practical Treatise on Aural Surgery.* By H. MACNAUGHTON JONES, M. D. Philadelphia: Lindsay and Blakiston. 1878. 8vo, pp. 174.

The book consists of remarks on the methods of examining the ear, and the treatment of the various diseases of that organ, chiefly based on the author's own experience. No claim to originality is laid. In the mere matter of the book there is but little to condemn. Its chief fault is its very great incompleteness and lack of systematic arrangement.

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THE REGISTRATION OF DISEASES IN CENSUS RETURNS.

It has been estimated that the present epidemic of yellow fever in our Southern States will have entailed a loss during the few months of its prevalence of at least two hundred million dollars, but no price can be set on the valuable lives which might have been saved, or upon the suffering which might have been avoided, by the application of perfectly well-known laws of hygiene. People are slow to learn, however, and if this terrible visitation only teaches the lesson which England learned thirty years ago from the outbreaks of cholera in that country, we shall have at once a national board of health, the inauguration of a vigorous war against filth and disease, and a registration of vital statistics which may at last bear comparison with that of other civilized lands. Bitter as the experience has been, and high as the cost of this great advance in sanitary administration is sure to prove, they cannot be said to be too dearly bought if prompt measures are taken to supply such knowledge to our local authorities as shall prevent the recurrence of similar calamities, and if the reproach of the abounding filth of many of our cities is swept away. We conceive this to be a matter of so great importance that we consider it the duty of every state board of health, every local board of health, and every medical society in the country to urge their senators and representatives, as a solemn duty, to leave no stone unturned in their efforts to secure a general board of health, which shall be free from political influences, and which will reflect credit on the whole country.[1] In the departments of the army, navy, and Marine Hospital service we have men whose labors in the promotion of sanitary science, in the application of practical hygiene to saving life and preventing disease, have won them enviable reputations in this country and in Europe. There are trained men, too, in civil life thoroughly competent for so important a trust; so that there is no longer any excuse for our lagging far behind England, France, Germany, and even Persia.

The epidemic has already borne excellent fruit in the very valuable weekly bulletins of deaths and disease, prepared under Dr. Woodworth's direction, the usefulness of which we hope to see expanded and extended as better facilities are given by Congress for collecting and collating exact information from all parts of the States.

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[1] In this connection we call the attention of our readers to the text of a memorial to Congress printed on another page.

Dr. Billings, too, has recently proposed a schedule of questions to be asked in preparation of the statistical data for the next census, the importance of which cannot be too strongly stated. Let us hope that pressure enough will be brought to bear, from every physician in the land if necessary, to have this provision adopted. Ten years ago there was a proposition to insert in the census blanks the question: "Is he or she of the usual health of his or her years? If not, what is the disease or disability?" — to be asked of every man, woman, and child; but it failed, although urged by Dr. Edward Jarvis, the first medical statistician in our country, and although advocated with the eloquence of one of our most distinguished citizens, the late Charles Sumner.

The questions suggested by Dr. Billings are as follows: First, Number of days during past year in which the person was unable to follow his or her usual occupation on account of Diseases (D) or Injuries (I). (Attendance at school considered as an occupation.) Second, Is the person sick on the 30th day of June? If so, name the disease or injury. Third, Is the case being treated in Hospital (H), by a physician from a Dispensary or Public Charity (C), by a private Physician (P) or without a Physician (N). Fourth, Has the person during the past year had any of the following diseases, namely, Small-Pox or Varioloid (S P or V); Scarlet Fever (Sc); Measles (Me); Diphtheria (D); Typhoid Fever (T F); Malarial Fever (M F) (includes Ague, Bilious Fever, and Remittent Fever); Yellow Fever (Y F); Acute Lung Diseases (L D) (includes Lung Fever, Pneumonia, and Pleurisy); Acute Rheumatism (A R); Cerebro-Spinal Meningitis (C S M). Fifth, What has been the cost to the person (or head of the family on his account) during the past year from sickness in (*a*) loss of wages or salary; (*b*) cost of medical attendance, medicines, and nursing.

These queries explain themselves, and can be answered by most fairly intelligent persons; from the ignorant classes, of course, a considerable amount of inexact and incorrect material will be collected. But that is unavoidable under any circumstances, and even approximate results will be of such vast interest to the sanitarian, the economist, the statistician, and the physician that we venture to predict that they would be followed by a general stimulation of our state and municipal authorities, such as would give to many thousand people increased health and additional security to life from all filth-begotten diseases. The questions, on the whole, seem to us the best that can be devised; they do not ask too much nor too little; and the character of the replies themselves will afford a fair indication to what extent they can be considered trustworthy. The published census reports of Ireland give information only as to the amount of sickness on the day when the census was taken. Dr. Billings, we are glad to see, attempts much more, — more, indeed, than we are accustomed to find in those admirable yearly reports from Holland, where the registration of contagious and infectious diseases has been required by law since 1872.

MEDICAL NOTES.

— In the Pacific *Medical and Surgical Journal* for October is a communication from Dr. W. P. Gibbons, chairman of the section of materia medica and therapeutics in the state society, which is devoted to the welfare of a certain Dr. (?) I. H. Bundy, who is making himself notorious by putting upon the market a series of "California's new remedies," namely, yerba santa, cascara sagrado, yerba reuma, grindelia robusta, etc. Dr. Gibbons tells a plain, unvarnished tale about these plants, and finishes the said Bundy as follows: "It is not agreeable to deal in personalities. But where quackery and ignorance make such bold pretensions as are contained in this paper, under the guise of an M. D.; when the *Philadelphia Chemist and Druggist* reprints such worthless bombast under the head of California's New Remedies; when this is recopied by a California medical journal, edited by two 'professors in the medical department of the State University,' and copied over again by one of the leading journals of San Francisco, it is due to the medical profession in California and elsewhere that the fact should be known that 'I. H. Bundy, M. D.,' is not a member of the regular profession, and is apparently getting ready to flood the market with a new series of quack preparations under the name of California's new remedies."

— In the will of the late Dr. Washington L. Atlee, admitted to probate last week, appear the following clauses of a public character: —

"I hereby direct that none of my accounts of charges remaining unsettled at the time of my death against the following classes, to wit, clergymen and their families, physicians and their families, indigent widows, indigent single women, and female servants, shall be collected, and the same shall be considered satisfied and canceled.

"I appoint Thomas M. Drysdale, M. D. (Dr. Atlee's son-in-law), my literary executor, to take charge of my publications and manuscripts, including my manuscript books and cases, clinical notes and professional correspondence, and to utilize them as much as possible for the benefit of science, art, and humanity."

— Dr. Edmund Andrews, professor of surgery in the Chicago Medical College, has devised an ingenious "searcher" for detecting minute fragments of stone in the bladder. It is simply a combination of Toynbee's otoscope, and an ordinary short-curved catheter, which, however, is not fenestrated. Probably any form of catheter or sound would answer as well. If this combination be as sensitive as is asserted by Dr. Andrews, it will be nearly as serviceable as the microphone, be more convenient, and far less expensive. See the *Medical and Surgical Reporter* for October 12th.

— A case of absence of the inter-auricular septum, without cyanosis, discovered post mortem in a man aged forty, is reported in the London *Lancet* of August 24th by Richard Caton, M. D.

— In a Kentucky confinement case, child and placenta being expelled together, the latter was found to be a battledore, the margin opposite the insertion of the cord being attached to the anterior fontanelle of the child, which was hydrocephalic.

— A new venture in medical journalism is announced in London, to be called the *International Medico-Chirurgical Gazette of London.* The journal in some way will coöperate with the *Allegemeine medizinische Zeitung* of Vienna. Communications will be published in the two journals simultaneously. The success of the publication seems doubtful. In our own country there recently has been an eruption of medical journals which impress one as being of a "*self-limiting*" character.

— Evidences are accumulating in favor of nitrite of amyl as a prompt and valuable cardiac stimulant in cases where a quick action is needed. Unfortunately, however, too many physicians are afraid of this useful preparation, notwithstanding it has never done any harm, even when inhaled in half-drachm and drachm doses.

— The latest telegram from Surgeon-General Sir A. D. Home at the island of Cyprus states that out of a force of two thousand six hundred and twenty-two royal engineers, four hundred were in hospital, and between twenty and thirty have died since landing. The surgeon-general has twice suffered attacks, and nearly all the medical staff have been invalided for a time. The *Medical Times and Gazette* calls the island "Beaconsfield's white elephant."

— Mr. John Hilton, of London, is dead. He has occupied the presidential chair of the Royal College of Surgeons, also of the Pathological and New Sydenham societies. He was surgeon-extraordinary to the queen, consulting surgeon to Guy's Hospital, and fellow of the Royal Society. He was the author of several works and contributions to medical literature. His age was seventy-four years.

— Dr. Kelp has successfully treated nocturnal enuresis by hypodermic injections of strychnia.

— The *Medical and Surgical Reporter* says that a Turkish physician, his student, and several other members of a Turkish colony have settled in East Tennessee.

— In an editorial the *Medical Times and Gazette* says, "It is unfortunately true that the wards of our hospitals are too much neglected by students, but we have always thought that for this neglect they are not alone to blame. So long as attendance upon long courses of lectures is insisted upon by examining boards, so long will the student's time and attention be diverted from the wards to the lecture-room, from subjects which he can only well learn at hospitals to subjects which he can learn as well at home." The change here indicated is vitally needed in the majority of our medical schools.

* * *

THE JOHNS HOPKINS UNIVERSITY.

Mr. Editor, — The youngest university of the day is springing up with a rapidity characteristic of the age we live in, and the substantial yet tasteful architecture of the buildings gives proof that durability with usefulness of edifice is now attained, with great saving of time and without sacrificing a very important feature, — attractiveness.

In giving an account of the progress made, a short retrospect of the Johns

Hopkins endowment will serve to refresh the memory and bring us from the very beginning down to the present. Seven millions of dollars were bequeathed by Johns Hopkins to found a university and hospital. Accordingly, in 1875, at the Academy of Music in Baltimore, the university was formally and legally founded in the presence of a vast concourse of distinguished *literati* from all parts of America, with a sprinkling of transatlantic *confrères*. The work of construction as regards the university proper commenced, and in the fall of the same year its doors were thrown open to students of every sect and religion from all parts of the world. The scientific and medical departments followed in the wake of the academic, and now quite an imposing array of buildings presents itself to view. The question of plans, more especially, of course, for the hospital, had been much mooted; lengthy discussions and protracted correspondence had transpired, which finally took shape in one large volume on Hospital Construction, sufficiently well known. The London *Lancet* of February 10, 1877, pays a high tribute to Dr. Billings, chief of the Hygienic Department of the United States army, and gives such a concise and excellent review of the volume in question, culling the leading facts, that we feel warranted in reproducing a few of them here. The opinion of Dr. Billings had been sought for by the committee, desirous of being guided in their work " by a man whose authority in such matters is not only great, but whose opinion must necessarily be totally unbiased, since he in no way will benefit by any of the Hopkins bequests."

The new hospital is designed to receive four hundred patients; a site for the buildings — which, it is stated, will number twenty-seven — has been selected on the east side of the city, on the slope of a hill having a gentle declivity, and overlooking Canton and the water on one side and Baltimore on the other, being a part of the old estate of Clifton, which belonged to the testator. The average elevation is one hundred and twelve feet above high-water mark; the soil is of stiff clay with beds of sand beneath, affording excellent facilities for surface drainage. The general aspect of the site is toward the south, the size being about fourteen acres. Some protection will be obtained to the northeast by the crown of the hill belonging to the grounds, in the centre of which is a garden one hundred and seventy by five hundred feet. The buildings will consist of sixteen pavilions containing the wards, separated from each other by a distance of sixty feet, and raised by a basement story eighteen feet above the ground, being united by a corridor on much the same plan as those in the Leipzig Hospital, which is considered the finest in Europe. The connecting corridor will cover six hundred yards. The kitchen is three hundred and ninety yards from the furthest ward, and the dispensary is nearly as far. The sick wards are on the south side of the corridor and face south, while the service buildings — containing closets, baths, separation wards, etc. — are on the north side. Two wards are devoted to pay patients, and two are set aside for cases needing isolation, — for infectious diseases, — placed at the extreme ends of the corridors, and furthest from the kitchen, dispensary, laundry, etc.

The administration department will form the main front of the hospital, and will be the ornamental part of the edifice. Here will be accommodations for the superintendent, resident physicians, and resident students, with library, dining-room, house dispensary, and apothecaries' quarters; the dispensary will be fourteen by eighteen feet, — quite insignificant in size. A new feature will be a school and home for nurses, with lodging for sixty nurses and probationers. The laundry, kitchen, servants' dining-rooms, store-rooms, boiler and engine houses, are all placed in one building situated at the northwest angle of the hospital. It is proposed to heat the hospital by means of steam-pipes from the furnaces and boilers. The main chimney will be one hundred and seventy feet high, and will also be used as an aspirating shaft for the whole hospital, each ward being placed in communication with it by means of a three foot duct.

The out-patient department and the operating theatre form a separate building, which is very complete, and comprises waiting, etherizing, consultation, and recovering rooms, with the ordinary arena and gallery. The autopsy building is also very complete, having, besides the regular arrangements, special rooms for microscopy and photography. The hospital will be fitted throughout with means of electric communication, the centre of which will be the superintendent's room, where such matters as the temperature of wards, the rate of influx of air, etc., will be recorded.

Finally, it is proposed to have a hospital literature, — a printed gazette containing records of cases, notices of operations, as well as medical and surgical hospital news, both general and special. The sheet will be issued, we believe, weekly.

The foregoing is more or less prospective, as four years at least must elapse before completion, and before the work is under full headway. At present seven or eight buildings on the hospital grounds are in process of construction, and some are ready to be roofed over, but as far as the organization of the hospital staff and scientific work are concerned they are not likely to begin for some time yet.

It is different with the university proper and the scientific department. These buildings are completed, and in full operation; they are situated on one of the great streets of the city and near its centre. They are of brick, built in the best manner, and surrounded in front and at the sides by pretty flower gardens. In the main building, on the lower floor, is the administration department, — offices, registrar's bureau, etc., — and above are the recitation rooms and others for the use of the professors. Immediately adjoining this, and connected with it in such a manner that those passing from one to the other are under cover, is another building, the lower part of which is devoted to a large auditorium called Hopkins Hall, containing a handsomely inlaid memorial tablet, and hung with sepia drawings of ancient Egyptian monuments. This is the general lecture hall, — devoted at times to free scientific and literary lectures. On the second floor is the library, containing already about seven thousand volumes; this library — where all the leading literary and scientific journals, magazines, periodicals, etc., published in Europe and America, are taken — is for the use not only of the university, but of the whole medical profession, gratis. Mounting to the third floor we enter the biological laboratory. The laboratory is well furnished. The professor, Mr. Martin, is present, or, in his absence, the assistant, so that there is usually some one there to help students all the time, — from nine A. M. to five P. M. Each student is provided with a microscope, reagents, and material for dissection. The physiological apparatus for study and research is ample. Advanced students and persons engaged in biological research are provided with rooms apart from the general laboratory, where they can carry on their work without interruption. Just beyond, and distant only a few yards, is the chemical building, of two stories. The basement is the receptacle for wares, such as boxes, retorts, jars, test-glasses, etc. On the first floor is the fine laboratory; here, again, Leipzig has been taken for a model, and this laboratory built after Professor Kolbe's. It has accommodation for from twenty to twenty-five students at one time, each being provided with his drawer, table, and full set of chemicals. On the same floor are the combustion room, the room for generation of sulphureted hydrogen, and a room for the Fellows to work in. Upstairs is the lecture room and a small museum. A good chemical library is kept in a special room in the laboratory building, easily accessible to the students. It contains full sets of the more important chemical journals, most of the standard works on chemistry, and an array of current chemical periodicals, regularly taken, will be found there. The Scientific Association of the Johns Hopkins University meets monthly, when an opportunity is afforded of presenting reports on recent chemical progress, and on scientific work generally.

No regular plan of medical education has been formally announced, except the preliminary course, already noticed in the JOURNAL.

The books are now open; the courses commence this week, and the limited number that can take part in practical biological research is being rapidly filled up, — four or five having already enrolled themselves. It is considered a mistake to place the biological course as an elementary one instead of as a graduate or post-graduate course.

In the construction of the hospital alluded to in the first part of this article, it is thought that some things might have been improved upon: for instance, as the wards are elevated above the corridor by a flight of steps ten feet high, great labor and inconvenience will be experienced in the distribution of food, drugs, etc.; again, there are no cross-corridors, and the whole circuit of the building must be made in order to get from one ward to the other, which will be fatiguing to physicians. The ten feet under the wards is, then, so much waste space, and as the isolated wards for infectious diseases are at the extreme ends the result is that all traffic to and from them must take place through the whole of the connecting corridor, the air in which, in spite of the different levels, must find its way into the wards above. The contiguity of the dispensary to the residents' dining-room has also been objected to; this, however, is only unpleasant. For us the worst of all is that in the nurses' home, which the *Lancet* pronounces ill-planned (and not without reason), the water-closets and baths, thirty in number, will none of them have any direct window communication with the open air; they are clustered together round a central shaft, and currents undoubtedly will descend this. Sixty-six nurses and probationers may suffice as a nucleus, but would hardly be enough later.

The new university, notwithstanding the brilliant professors engaged, will find formidable rivals in the older ones, such as Harvard, Yale, and others, for which the public have a decided *penchant*. The standard is not so high as could be wished in consideration of the ability of the professors. Students would be more appreciative of the deep subjects treated and better able to comprehend them after two or three years' study.

Free scholarships are provided for those young men coming from Maryland, Virginia, and North Carolina in need of assistance. As for the general plan of academic instruction, there are seven methods on the printed formula, any one of which may be chosen by the student, — a mixture of scientific and academic instruction in one course of three years.

BALTIMORE, *September* 26, 1878.

SHORT COMMUNICATIONS.

A MEMORIAL PRAYING FOR THE ESTABLISHMENT OF A NATIONAL PUBLIC HEALTH BOARD FOR THE PURPOSE OF IMPROVING PUBLIC HYGIENE.

To the Senate and House of Representatives of the United States in Congress assembled: —

This memorial, presented by the undersigned, practitioners and teachers of medicine in the United States, respectfully showeth: That whereas, with a view to the better protection of the public health, it is highly desirable that statistics of mortality and disease should be collected throughout the United States upon a uniform plan. And whereas, in the approaching general census of the United States an unusually favorable opportunity is offered for obtaining such statistics. And whereas, it is believed that scientific and systematic investigation into the causes and methods of prevention of the so-called epidemic and contagious diseases is much needed, and cannot fail to produce results of value to the whole country. And whereas, there is no uniform standard of the qualifications which should be possessed by health officers in this country, and it is considered highly desirable that such a standard should be established and means be provided whereby the public may receive authoritative information as to who are possessed of these qualifications. And whereas, it is believed that a board of medical men constituted as hereinafter suggested could do much towards supplying the wants above indicated, and that its suggestions and recommendations upon all matters relating to the public health would be of well-recognized value.

Therefore, it is respectfully recommended that the necessary legislation be provided for the organization of such a board, and for defining its duties, in accordance with the following provisions: —

I. That the board shall be constituted of one medical officer from each of the following-named departments, namely: The medical department of the army, the medical department of the navy, and the marine hospital service, and of two physicians from civil life, selected on account of their knowledge in matters pertaining to public health. That the medical officers of the government services for this board shall be detailed by the secretaries of war, of the navy, and of the treasury respectively, and that the three officers so designated shall select and recommend to the president for appointment the other two members of the board.

II. That the board so constituted shall be known as the United States Public Health Board, and that its duties shall be to obtain information upon all matters affecting the public health; to consult with the superintendent of the census with regard to the disease and mortality statistics to be collected and prepared under his direction; to advise the several departments of the government, the executives of the several States, and the commissioners of the District of Columbia, on all questions submitted by them, or whenever in the opinion of the board such advice may tend to the preservation and improvement of the public health. To establish a standard of the qualifications which should be possessed by a municipal health officer, to examine those who may present themselves for examination as to their fitness for such a position, and to furnish suitable formal certificates to those found to be properly qualified.

III. That the detailed officers shall receive their usual payment allowances from their respective departments, and that the two physicians selected from civil life shall each receive compensation at the rate of five thousand dollars per annum from the funds appropriated for the use of this board. That the ordinary sessions of the board shall be in Washington, where it shall have its office, and that at least one member of the board shall be always on duty during the usual office hours.

IV. That the board shall prepare and present to Congress an annual report of its operations, with such recommendations as may seem to it advisable.

V. That when deemed specially desirable by the board it may send one or more of its members to any point within the United States for the purpose of investigating a disease or other matter specially affecting the public health, and that the actual traveling expenses of the members so sent shall be paid from the funds appropriated for the board.

VI. That to carry out the provisions of this act, for the salaries of the civil physicians, office rent, traveling expenses, stationery, clerk hire, and miscellaneous expenses, the sum of thirty thousand dollars be appropriated, to be disbursed and accounted for by the president of the board in accordance with its directions, and on vouchers and forms to be prescribed by the secretary of the treasury.

AN AUTOPSY REVEALING THE OBLITERATION OF THE TRICUSPID VALVES.

BY J. B. BURROUGHS, M. D., WESTFIELD, MASS.

On the 18th of August last I visited with my preceptor, Dr. H. Gamwell, J. D., Irish, aged twenty-six years, a very muscular, temperate, industrious man, married three weeks. Found him in bed, with a raging headache, which had been coming on for a week; pulse 64; temperature 99° F.; bowels a little constipated; scanty urine; no abdominal pain nor tenderness; tongue clean. The patient talked freely about his business, and said he had been in the habit the past winter of arising at one o'clock, A. M., and sleeping on his sleigh until his horses found their way to the mountains, twelve miles away; he often awoke during these early morning rides chilled through. During the past year he had been to the office several times to see the doctor about the pain in his back and difficulty of respiration. Friends remembered that he had been given to sighing; frequently "took a long breath," and had dyspnœa on going upstairs rapidly.

The following day we found him much the same, — more restless and less inclined to talk, — and diagnosticated kidney disease, with probable uræmia.

On the 24th the pulse was still 64; temperature 99° F.; eyes hazy and dull; the patient lying in a lethargic sleep. The bowels moved only by taking a cathartic. As the prognosis was unfavorable, the friends of the young wife dismissed the attending physician, and called in an "eclectic," who diagnosticated the case as "congestion of the brain and bowels, and congestive typhoid fever." The patient died on August 28th. As there was considerable talk about his dying of typhoid fever, and of a wrong diagnosis, a post-mortem examination was sought and granted, Drs. Gamwell, Waterman, Clark, and a number of friends being present. The eclectic was requested by his friends to be a spectator, but he failed to present himself.

Examination of the thoracic and abdominal cavities showed the liver to be somewhat enlarged; the peritoneal cavity free from serum and inflammatory lesions; the lungs to be extensively adherent to the walls of the thorax, caused by an attack of pneumonitis two years previous. Slight ossification of the pulmonary artery and its branches, and an unusually thin aorta, were next noticed, and the right side of the heart was hypertrophied and dilated, the dilatation being greatest in the auricle. On opening into the left auricle and ventricle nothing abnormal was found. The right side of the heart revealed a most unexpected lesion in the entire obliteration of the tricuspid valves, leaving the right ventricle and right auricle with no septum whatever. The lesion, if not congenital, was evidently a gradual one, for if it had been of recent date there would have been a ragged edge left. On the contrary, there were neither chordæ tendineæ nor columnæ carneæ, the place of their former attachments being as smooth as other parts of the cavity.

The intestines and stomach were found perfectly normal; no congestion of the parts nor ulceration of Peyer's glands. In the liver and kidneys, which were enlarged, fatty globules appeared on the cut surface. Upon a careful examination the urine showed an abundance of albumen and an entire absence of urea. A microscopic examination revealed fat globules and casts.

The opinion of the medical gentlemen present was that the patient died of uræmia; that this was induced by exposure to cold, the dyspnœa being caused by the restricted position of the lungs consequent upon the firm and extended adhesion; that this also aided in causing the congestion of the kidneys, and thus hastened the result.

The abnormal condition of the heart was probably congenital, and had but little to do with the symptoms.

ABSTRACT OF SANITARY REPORTS RECEIVED DURING THE PAST WEEK UNDER THE NATIONAL QUARANTINE ACT. — No. XVII.

Office Surgeon-General U. S. M. H. S., Washington, *November* 2, 1878.

New Orleans, La. — There were 83 new cases of yellow fever and 109 deaths for the week ended yesterday. During the week the Board of Health received information of 288 old cases not previously reported. For the past twenty-four hours there were four new cases and eight deaths. Total cases 13,252, total deaths 3973.

Morgan City, La. — During the past week there were eight deaths from yellow fever. Total cases to date 563, deaths 102.

Baton Rouge, La. — For the week ended yesterday evening there were 75 cases of yellow fever and 16 deaths. Total cases 2415, deaths 160.

Mobile, Ala. — During the week ended yesterday evening there were 60 new cases of yellow fever and 10 deaths. Total cases 224, deaths 59.

Decatur, Ala. — There were 10 cases of yellow fever and two deaths for the week ended November 1st. Total cases 188, deaths, 42.

Bay St. Louis, Miss. — Total cases of yellow fever to yesterday evening 535, deaths 78. Only an occasional case occurring now, and the local health authority considers the epidemic at an end.

Port Gibson, Miss. — There were about ten deaths in the country near Port Gibson during the past week; none in Port Gibson, where the epidemic is considered at an end.

Pass Christian, Miss. — During the week ended yesterday evening there were 19 cases of yellow fever and no deaths. Two deaths from yellow fever occurred in the week ended October 25th, which were not reported in that week. Total cases to date 189, deaths 20.

Grand Junction, Tenn. — To October 26th there were 174 cases of yellow fever and 74 deaths.

Milan, Tenn. — For the two weeks ended yesterday evening there were 12 cases of yellow fever and six deaths. Total cases 15, deaths 9.

Memphis, Tenn. — During the week ended October 31st there were 22 deaths from yellow fever. Total deaths 2964. The Board of Health announced officially, October 28th, that absentees could return with safety.

Mason, Tenn. — The first case of yellow fever — a refugee — occurred August 29th, the first case among inhabitants October 4th, since which time to yesterday evening there have been 60 cases and 24 deaths.

Ghattanooga, Tenn. — During the week ended yesterday evening there were 28 new cases of yellow fever and 12 deaths. Total cases 433, deaths 127.

Meridian, Miss. — Over 400 cases of yellow fever are reported to have occurred to date. Total deaths, 80.

Gallipolis, Ohio. — During the week ended October 30th one new case of yellow fever occurred and two deaths.

No cases of yellow fever or deaths in Louisville and Key West during the past week.

Havana, Cuba. — Twenty-three deaths from yellow fever and nine from small-pox for the week ended October 26th.

Rio de Janeiro. — One death from yellow fever and 11 deaths from "pernicious fever" for the week ended September 28th. In the same week there were 1495 deaths from all causes, of which 139 were from small-pox. Since May 1, 1878, there have been 1233 deaths from small-pox.

Europe. — In 149 cities and towns of the German Empire, having an aggregate population of 7,429,793, there were 5755 births and 3512 deaths for the week ended October 5th, being an annual mortality rate of 24.6 per 1000 of the population. The lowest death rate, 11.2, was in Kiel; the highest, 42.2, was in Augsburg. The deaths include 108 from scarlet fever and 147 from diphtheria and croup. None from small-pox.

John M. Woodworth,
Surgeon-General U. S. Marine Hospital Service.

COMPARATIVE MORTALITY-RATES.

	Estimated Population, July 1, 1878.	Deaths during week ending Oct. 26, 1878.	Annual Death-Rates per 1000 living.		
			For the Week.	For the Year 1877.	Mean for ten Years, '68-77.
New York.	1,093,171	448	21.31	23.42	28.71
Philadelphia.	876,118	256	15.19	18.80	21.54
Brooklyn.	549,438	207	19.59	21.51	25.50
Chicago.	460,000	143	16.17	17.83	22.39
Boston.	375,476	144	19.94	20.10	24.34
Providence.	100,000	36	18.72	18.81	19.20
Lowell.	55,798	12	11.18	19.09	22.50
Worcester.	54,937	13	12.31	20.06	22.30
Cambridge.	53,547	18	17.47	18.69	20.83
Fall River.	53,207	19	18.57	21.35	24.96
Lynn.	35,528	13	19.03	20.42	19.67
Springfield.	33,981	15	22.97	16.02	19.77
Salem.	27,140	9	17.24	20.38	21.15

The graduating exercises of the Medical Department at Dartmouth took place Tuesday evening, October 29th.

Delegates from State Medical Society: T. J. W. Pray, M. D., E. L. Carr, M. D.; Delegates from Vermont Medical Society: Henry Janes, M. D., L. C. Butler, M. D.; Committee: F. J. Small, H. M. French, W. F. Swasey.

Graduates, with titles of Theses: Fred Eugene Aldrich, N. Y., Prolapsus Uteri; John Fairfield Boothby, D. D. S., Me., Rheumatism; Edward Plinny Brewer, Conn., Sarcourata; Edward Josiah Brown, A. B., Vt., Opium and Cathartics; Frederick Chesley Clark, Me., Sick Headache; Albion Edwin Cobb, Me., Right Use of Medicines; Willie Hudson Foster, Mass., Erysipelas; Henry Minot French, A. B., N. H., Variola; Joseph Warren Gordon, N. H., Abscess; Frank Eugene Henderson, Vt., Rupture of Perinæum; Edw. Bigelow Hitchcock, D. M. D., Mass., The Teeth, etc.; Edward Gilman Inlay, N. Y., Luxations of Humerus; Edw. Avery Isbell, B. S., Ohio; Edwin Porter Linfield, Mass., Vaccination; Geo. Franklin Munsey, N. H., Repair of Fractures; Edwin Osgood Pearson, B. S., N. H. (Valedictorian), General Paresis; George Lewis Perry, Vt., Acute Peritonitis; Frederic Joseph Small, Me., Diphtheria; Wm. T. Smith, A. M., N. H. (Reader), Science and Art of Medicine; Silas Appleton Stephens, Me., Trismus Nascentium; William Franklin Swasey, Vt., Acute Inflammation; George Seeley Thompson, N. Y., Dysentery.

Books and Pamphlets Received. — Harvey and his Discovery. By J. M. DaCosta, M. D., Professor of the Practice of Medicine at the Jefferson Medical College. Philadelphia: J. B. Lippincott & Co. 1879. (From A. Williams & Co.)